Inventory & Monitoring in the National Park Service

Outline

- Explain the I&M program at the national/regional levels
- Describe the Central Alaska Network
- Approach we've taken to establishing the monitoring program

Impetus of National Program

- Parks focused on single species management
- Realization this did not fulfill the mandate of NPS
- Recognized need to manage ecosystems of parks
- To do so, must know what's there and how it's doing

"Vital Signs" Inventory and Monitoring Program

- To explain program to Congress, used analogy of human vital signs
- Identify the 'vital signs' of a system so that breakdown of system is detectable
- Translate this to fundamental ecological parameters that indicate ecosystems function

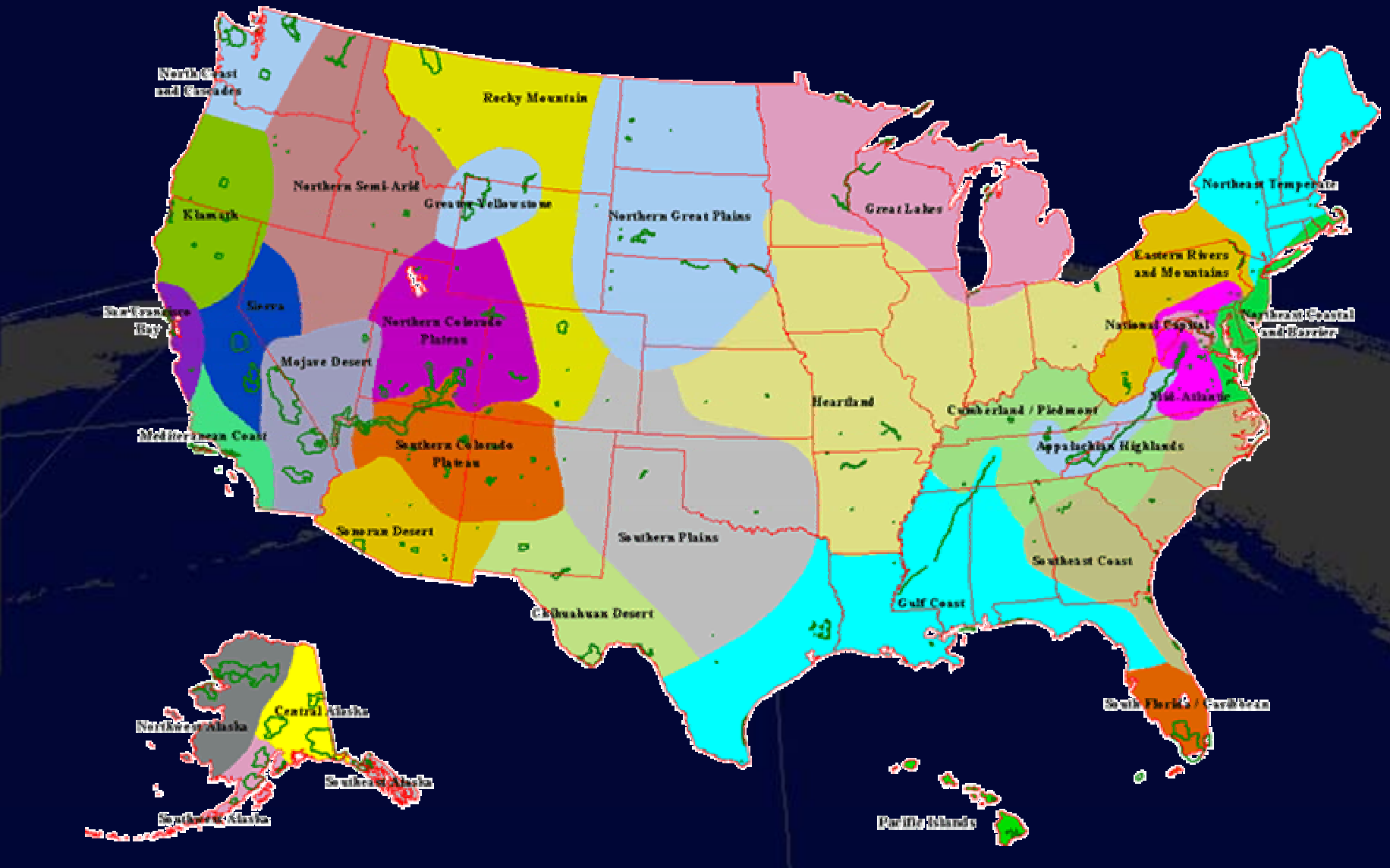
National Program Goals

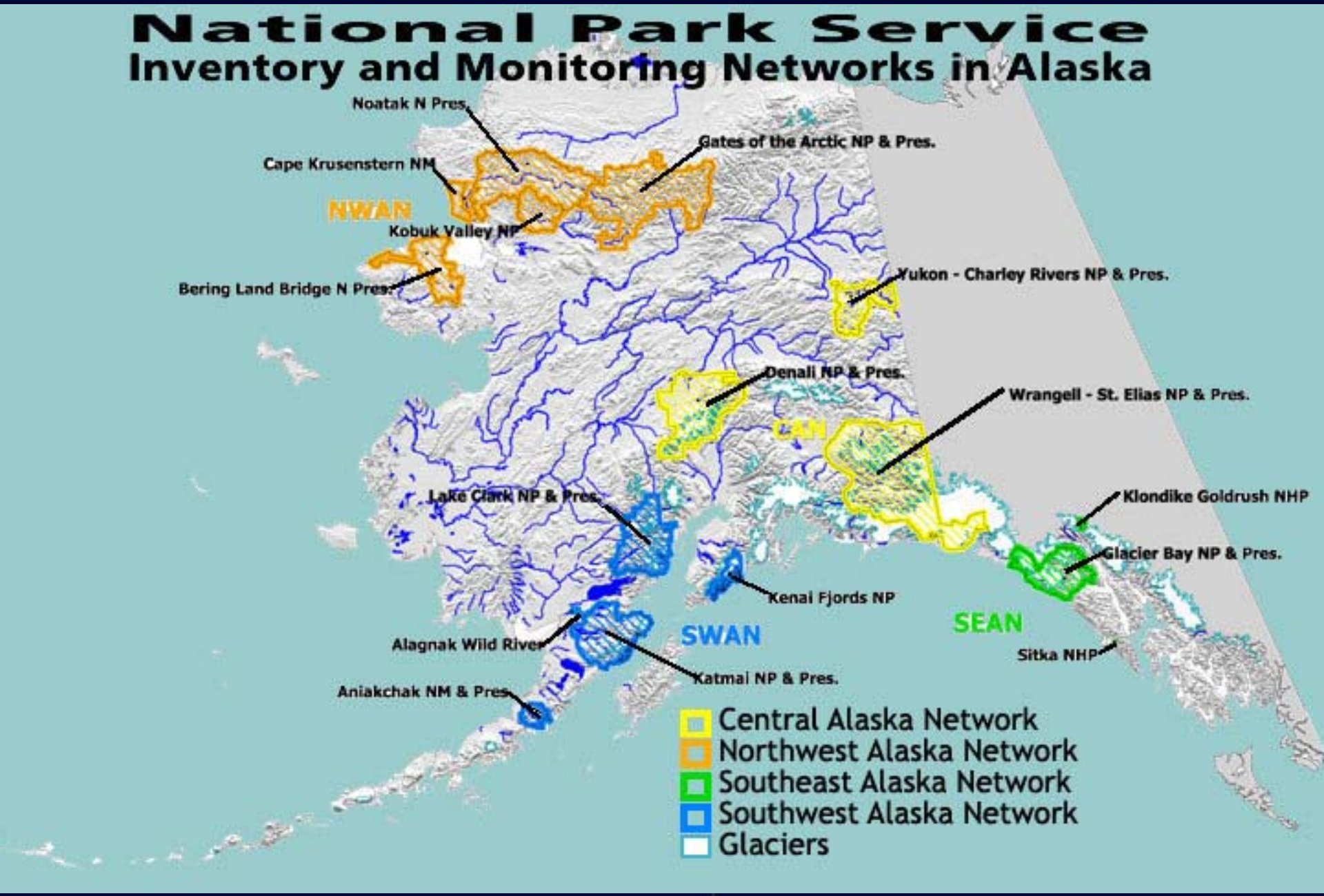
- Determine status and trends in selected indicators of the condition of park ecosystems to allow managers to make better-informed decisions
- Provide early warning of abnormal conditions of selected resources
- Provide data to better understand the dynamic nature and condition of park ecosystems
- Provide data to meet certain legal and Congressional mandates

National Structure

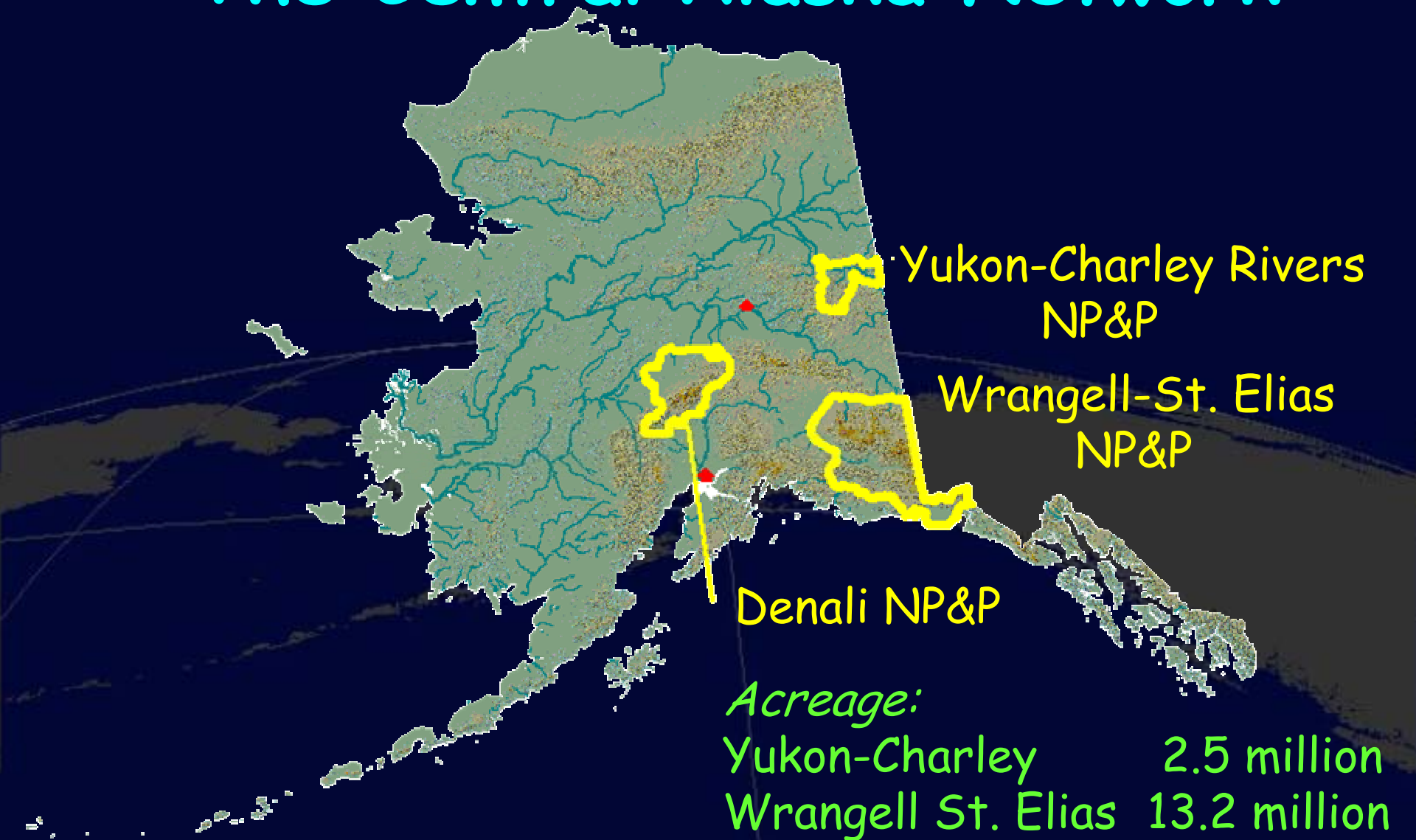
- Approximately 252 park units with significant natural resources
- Impossible to have a full I&M staff at each unit
- Creation of 32 "networks" of parks
- Each network has a minimum staff of coordinator and data manager

Networks Nationwide




National Park Service
Inventory and Monitoring Networks in Alaska
Noatak N Pres.
Gates of the Arctic NP & Pres.
Cape Krusenstern NM
NWAN
Kobuk Valley NP
Bering Land Bridge N Pres.
Yukon - Charley Rivers NP & Pres.
Denali NP & Pres.
Wrangell - St. Elias NP & Pres.
CAN
Lake Clark NP & Pres.
Klondike Goldrush NHP
Glacier Bay NP & Pres.
Kenai Fjords NP
SEAN
SWAN
Alagnak Wild River
Sitka NHP
Katmai NP & Pres.
Aniakchak NM & Pres.
Central Alaska Network
Northwest Alaska Network
Southeast Alaska Network
Southwest Alaska Network
Glaciers

The Central Alaska Network



Acreage:

Yukon-Charley	2.5 million
Wrangell St. Elias	13.2 million
Denali	6.0 million
TOTAL	21.7 million

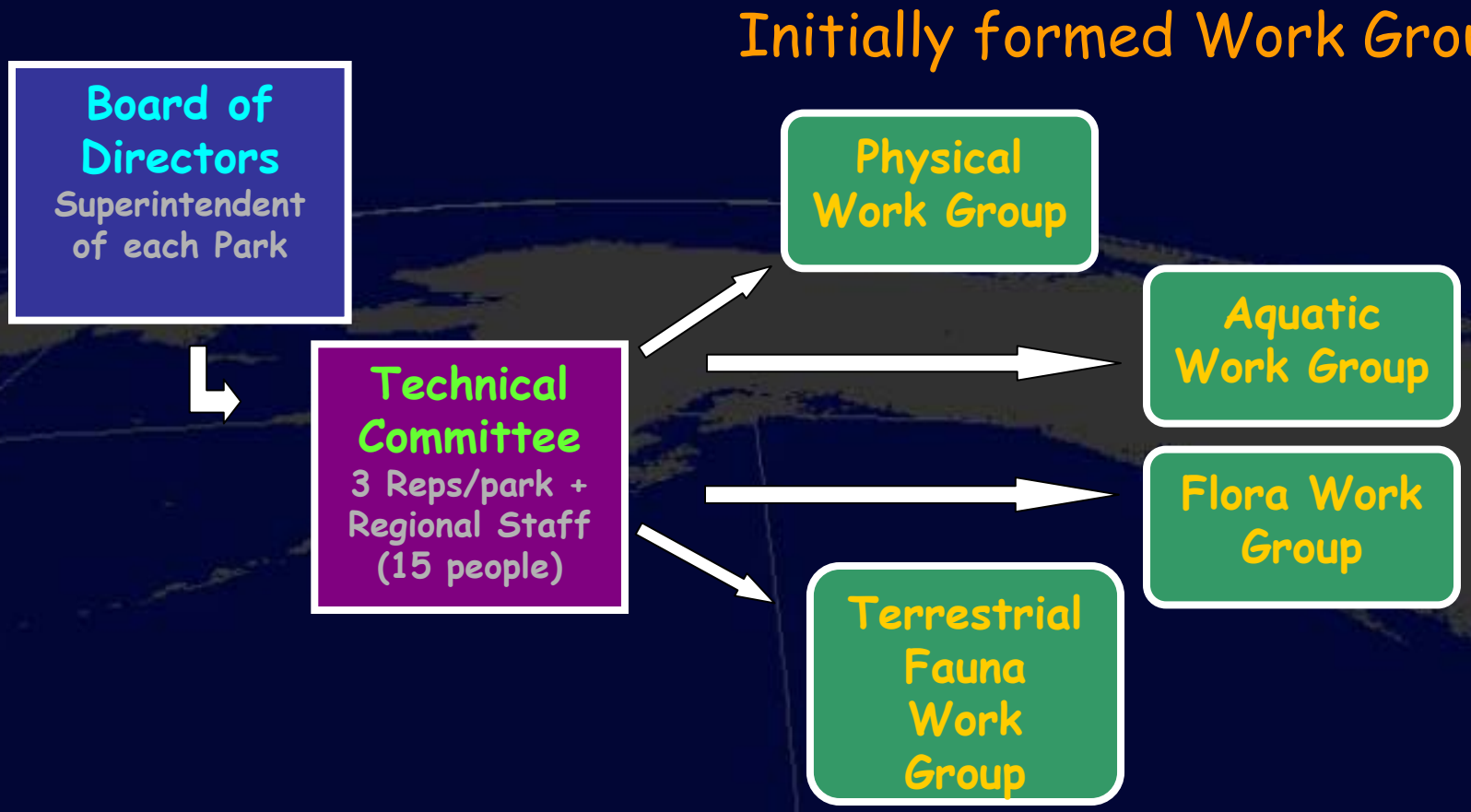
The "I"

- Inventories:
  - 12 baseline datasets (biological is 1)
  - biological inventories started in '01
- Finish collecting I data in '03, write up complete in '04
- Work conducted by mixture of park biologists and contractors
- Decisions about which bio. Inventories were conducted were at network level

The "M"

- Guidance from Washington to develop program:
  - Structural - charters, etc.
  - Process - workshops, etc.
- High accountability
- Generally, "take it slow and do it right"
- Latitude in choosing what to monitor

Organization of CAKN



Work Groups include Tech. Comm and other NPS, agency staff

Staffing and Park Involvement

- Technical Committee (including Chiefs) and USGS liaison pivotal
- Time commitment by Tech. Comm.:
  - day long meetings ~ every 6 weeks Aug.-Dec.
  - conference calls monthly Jan.-Mar.
  - Scoping Workshop 2½ days April
    - *not including travel time!*
- Work Group meetings in addition to above

Network Progress '01-'02

- Board of Directors, Technical Committee established (Mar. 01, July 01)
- Park-level workshops (Sept. '01)
- Focused Work Groups draft strategies for monitoring (Oct. 01 -Mar. 02)
- Initial Scoping Workshop (Apr. '02)
- Data Mining, Reporting (ongoing)

Goals of CAKN

- Network Goal: a holistic view of resource change
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- Framework of extensive/intensive objectives
  - extensive = 'landscape' level inference
  - intensive = park-specific or economically infeasible at larger scale

Our "End" in Sight

- Where does this approach get us?
- Promotes marriage of scale between monitoring efforts
- Ecoregion approach to conceptual models facilitates this
- Common probabilistic sampling design

An Example of a Probabilistic Sample Design

Many park resources vary along gradients at 3 spatial scales:

Regional scale - variation caused by large scale phenomena

- variation macro-climate regime
- glaciated vs. unglaciated

Meso-scale gradients - variation in attributes correlated with topography

- elevation, slope, aspect, individual site history

Micro-scale gradients - variation in very small scale gradients

- such as microtopography, within-site soil fertility

What Will We Monitor??

- Currently working on a long "short list" of candidate variables
- Thinking has evolved significantly in last 16 mos. – focus on getting the framework of program established
- Initiated interdisciplinary team in Sept.

Take Home Messages

- Networks have wide latitude in structuring their monitoring programs
- Regionally hoping to keep some commonalities in monitoring components
- No guarantee or assumptions about what will ultimately be measured